

REMARKS/ARGUMENTS

By this amendment, claims 1 and 3-5 are amended. Support can be found in paragraph [0031] of the present specification. Claim 1 was amended to clarify that a specified gas is introduced into the deposition chamber to dilute and lower contaminant concentration. Claim 1 previously recited that the gas dilutes the contaminant concentration. The term “dilute” means to “make less concentrated by admixture.” The new amendment clarifies the ordinary meaning of the word “dilute.” No new matter is introduced. Favorable reconsideration is respectfully requested for currently pending claims.

Deposition chambers used in PECVD systems have a fixed volume. Variable volume (expanding) deposition chambers are not used. In the context of a fixed volume deposition chamber, the only way to dilute or lower the contaminant concentration is to remove the specified gas, and contaminants entrained in the gas, at the same time the gas is introduced in the deposition chamber. In fact, the basic requirement of the specified gas recited in the specification is that it can dilute and lower the contaminant concentration as described in paragraphs [0020] and [0031] of the present specification. A portion of the contaminants must be removed from the deposition chamber, otherwise the contaminant concentration cannot be lowered or diluted. If the specified gas and entrained contaminants are not removed from a fixed volume deposition chamber, then the pressure within the chamber must be increased¹ and the concentration (amount of contaminant / unit volume) remains the same.

Claim Rejections – 35 USC § 112. The Office Action objected to the wording “nonreactive gas” on the grounds that it is not described in the specification. The term “nonreactive gas” in claims 1 and 3-5 has been amended to be --specified gas--. This amendment returns the claims to their original form.

Claim Rejections – 35 USC § 103. The Office Action rejected claims 1-10 and 16 under 35 U.S.C. 103(a) as being unpatentable over Ameen et al. (US 6,635,569) in view of Wakabayashi et al. (US 2003/0165620) and unpatentable over Gupta et al. (US 5,824,375) in view of Wakabayashi et al. The Wakabayashi et al. patent is newly cited, and the foregoing

¹ Pressure in a fixed volume, constant temperature system is a direct function of moles of gas within the fixed volume. Thus, pressure must be increased if more gas is added to a fixed volume, while maintaining the temperature constant.

amendments and following arguments address this newly cited prior art. Applicant respectfully submits that claims 1-10 and 16 are unobvious for the following reasons.

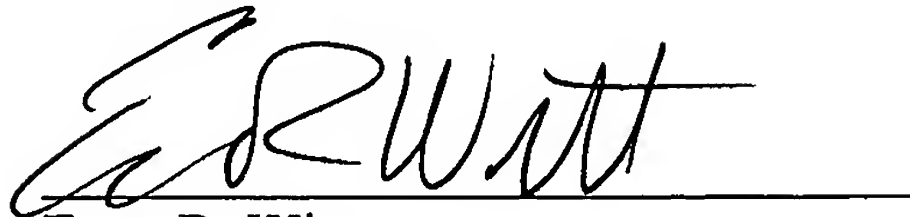
Neither Ameen nor Gupta discloses or suggests any step of introducing a specified gas into the deposition chamber which dilute and lowers the contaminant concentration after the pre-deposition procedure. As mentioned above, in order to dilute or lower the concentration in a fixed volume reaction chamber, a portion of the contaminants must be removed from the deposition chamber. Wakabayashi may disclose introducing an inert gas, but the inert gas does not dilute contaminants generated during the cleaning procedure as recited in claim 1 of the present application. On the other hand, the inert gas is fed into the film forming device to prevent the degeneration of the precoat film due to high temperature, for example, about 680°C ([0010]~[0012]). That is, according to Wakabayashi a step of lowering the temperature of the loading table accompanied with a step of feeding the inert gas can prevent from the degeneration of the precoat film. Wakabayashi's inert gas is used for keeping the film forming device at a certain atmosphere and no diluting effect is disclosed.

According to MPEP 8th ed. 706.02(j), to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Since the cited references neither intend to dilute contaminants in the deposition chamber nor suggest that contaminant concentration is diluted, there is no motivation or expectation in the cited references or combinations thereof to dilute the contaminants generated during the cleaning procedure. In view of the foregoing, Applicants submit that claims 1-10 and 16 are unobvious over Ameen et al. and Gupta et al. in view of Wakabayashi et al. Withdrawal of the rejection and allowance of all pending claims is respectfully requested.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If there are any remaining issues preventing allowance of the pending claims that may be clarified by telephone, the Examiner is requested to call the undersigned.

Appl. No. 10/631,134
Amdt. dated August 4, 2005
Reply to Office Action of May 5, 2005

Respectfully submitted,

A handwritten signature in black ink, appearing to read "E. R. Witt", written over a horizontal line.

Evan R. Witt
Reg. No. 32,512
Attorney for Applicant(s)

Date: August 4, 2005

MADSON & METCALF
Gateway Tower West
15 West South Temple, Suite 900
Salt Lake City, Utah 84101
Telephone: 801/537-1700